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BUREAU OF PLANT INDUSTRY
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Volume XII December 1, 1928 Number 14

A NEMATOSPORA FUNGUS FOUND IN CITRUS, POMEGRANATE FRUITS AND COTTON BOLLS IN IMPERIAL COUNTY

By H. S. Fawcett, Professor of Plant Pathology, Citrus Experiment Station, Riverside, California, and Collaborator, Office Mycology and Disease Survey, Bureau of Plant Industry, U. S. Department of Agriculture.

In September a species of Nematospora or yeast-like fungus was found in Citrus and pomegranate fruits sent to the Citrus Experiment Station by F. G. Beyschlag, Assistant Farm Advisor, Imperial County. The fruits were from trees infested with the leaf-footed puncture bugs, Leptoglossus zonatus. The citrus fruits in several orchards were yellowing prematurely and dropping from the trees. On cutting such fruits the juice sacs and other tissue next to the rind collapsed, and in process of drying out with development of yellowish-brown to reddish-brown stains. In this collapsed brown tissue were found under the microscope numerous yeast-like cells and minute sacs or asci of a fungus similar to the Nematospora described by Nowell (Diseases of crop plants in the Lesser Antilles. West Indian Committee, London) in citrus fruits, cotton bolls and many other host plants in the Lesser Antilles, and by Fawcett and Lee (Citrus diseases and their control, pp. 415-420. McGraw-Hill, New York) on oranges in the Philippine Islands. A Nematospora has also been reported recently in cotton bolls in Burma, India and in Liberia, Africa.

Affected citrus fruits were nearly all found on trees not far from pomegranate trees where large numbers of the leaf-footed puncture bugs were present. In most cases the citrus fruits affected were stained on the surface with the excrements of the puncture bugs or were seen with clusters of puncture bugs upon them. All evidence pointed to the fungus having been carried to the citrus fruits by means of the puncture bugs. In the Lesser Antilles, Nematospora is said to be carried by other puncture bugs, Dysdercus and Nezara having been mentioned by Nowell.

Recently in October, cotton bolls collected by J. B. Norton of El Centro in four separate localities in the Imperial Valley were found also to contain

Nematospora. Although no puncture bugs were found on them at the time, it is probable that the fungus had been transmitted by means of punctures. Yellowish-brown to reddish brown stains containing the fungus were found in immature lint just inside of unopened bolls and just opposite minute dots indicating previous insect punctures. It is suspected that the fungus has been present for a number of years but has remained unnoticed. As a result of experiments conducted by McGregor (Lygus elisus, a pest of the cotton region of Arizona and California. Tech. Bull. 4, U. S. D. A.) in the Imperial Valley in 1917 and 1918, he writes of the effect of the tarnished bug, Lygus elisus, as follows: "Since the actual mechanical injury associated with the feeding of Lygus is slight, compared with the resulting damage, it seems reasonable to suspect that either a toxic material or an organism may be introduced into the plant tissue at the time of feeding". This statement, together with McGregor's description of the damage leads one to suspect that this fungus has been present for many years. Further study may show that it has a much wider distribution in the southwest than now suspected.

Nov. 20, 1928.

SOME DISEASES OF VEGETABLES IN MASSACHUSETTS

The following notes were received from E. F. Guba (Nov. 15):

"Powdery mildew (Erysiphe cichoracearum) on cucurbits. Observations at the Market Garden Field Station, Waltham, August, 1928:

"Susceptible -
Cucumis melo chito (vine peach)
C. melo culta (cantaloupe)
C. sativus (lemon cucumber)

"Resistant -
Cucumis anguria (gherkin)
Sicyos angulatus (star cucumber)
Echinocystis lobata (bur cucumber)."

"Downy mildew (Bremia lactucae) common on outdoor lettuce and now appearing rather generally in greenhouse on Belmont variety.

"Mosaic common on tomatoes in greenhouses doing great damage in some ranges. At Market Garden Field Station a serious case of mosaic on tomatoes was noted following a severe case of mosaic on cucumbers. Dissemination of inoculum from cucumber to tomatoes seemed apparent through agency of greenhouse white fly.

"Tomato leaf mold (Cladosporium fulvum) common and destructive in greenhouses in vicinity of Boston. Foliage now (Nov. 15) totally infected in all ranges."

Reports on diseases of cereals for 1928 have been received to date as given below and are herewith acknowledged with thanks.

State	Collaborator	Number cereal disease reports
New York	J. G. Horsfall	49
Delaware	J. F. Adams	16
Virginia	S. A. Wingard	36
West Virginia	W. A. Archer	38
North Carolina	G. W. Fant & S. G. Lehman	14
Georgia	O. C. Boyd	6
Florida	G. F. Weber & A. H. Eddins	18
Indiana	E. B. Mains & J. F. Frost	33
Illinois	G. L. Stout	16
Michigan	W. R. Reddy & Ray Nelson	21
Wisconsin	R. E. Vaughan	41
Missouri	I. T. Scott	17
North Dakota	W. E. Brentzel	32
Kansas	C. O. Johnston	48
Mississippi	H. H. Wedgworth	44
Oregon	H. P. Barss	23

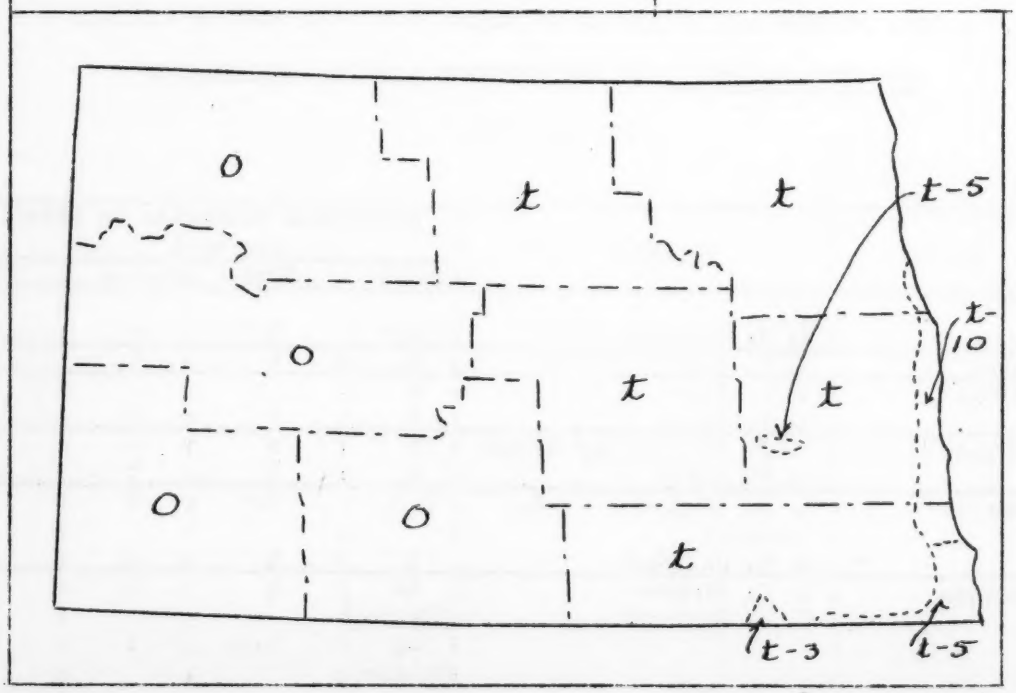
SOME PRELIMINARY ESTIMATES OF LOSSES FROM STEM RUST OF CEREALS (*PUCCINIA GRAMINIS*) IN THE THIRTEEN BARBERRY ERADICATION STATES, 1928.

State	Reporter	Percentage reduction in yield from stem rust			
		Wheat	Oats	Barley	Rye
Ohio	J. W. Baringer	0.25	t	t	t
Indiana	W. E. Leer	t	t	t	t
Illinois	G. L. Stout	t			
	R. W. Bills	t	t	t	t
Michigan	W. F. Reddy & Ray Nelson	t	t	-	t
	W. F. Reddy	t	1	t	t
Wisconsin	R. E. Vaughan & J. G. Dickson	0.5	0.5	t	t
	R. M. Caldwell	0	t	0	0
Minnesota	E. C. Stakman	t+ (Spring)	0	0	0
	L. W. Melander	2.4 (Winter)	0.65	t	0
		t			

Estimated percentage loss from stem rust of spring wheat (above line) and of oats (below line) in Minnesota by districts, 1928.

Average total per cent loss:
Spring wheat, 2.43
Oats 0.65

L. W. Melander,
Nov. 16, 1928.



Percentage losses to wheat from stem rust in North Dakota by districts for 1928.

G. C. Mayoue, Nov. 16, 1928.

State	Reporter	Percentage reduction in yield from stem rust			
		Wheat	Oats	Barley	Rye
Iowa	R. H. Porter	0	t	t	0
	P. W. Rohrbaugh	0	t-.5	t-.5	0
North Dakota	W. E. Brentzel & G. C. Mayoue	0.5	0.75	t	0
South Dakota	R. O. Bulger	1 (except durum); 0 (durum)	0	0.25	0
	H. A. Elcock	1	0	0.4	0
Nebraska	A. F. Thiel	t	t	0	0
Colorado	E. A. Lungren	(Spring): 1; (Winter): t	t	t	0
Wyoming	E. A. Lungren	(Spring): 3; (Winter): 2	t	t	0
Montana	H. E. Morris & P. A. Young	0	0	0	0

WHEAT NEMATODE (TYLENCHUS TRITICI) IN MARYLAND

In a letter to Dr. A. G. Johnson of the Office of Cereal Investigations, dated September 17, Mr. Clyde E. Thomas of Gaithersburg, Maryland, wrote that he had noticed nematode galls in wheat in the vicinity of Gaithersburg and Travillah this year.

SOME SPECIMENS RECEIVED

Sporotrichum poae on carnation, Newport News, Virginia, F. P. McWhorter, Nov. 24. Mr. McWhorter makes the following statement regarding the occurrence of the disease:

> "Sporotrichum bud rot of carnations has developed in a greenhouse in Newport News, Virginia. Of several varieties present in the greenhouse only a white one is reported to be infected. Associated with the disease is a mite, apparently Pediculopsis graminum. The development of the disease and

the mite agree closely with the description given by Stewart and Hodgkins in Bulletin 7 of the New York (Geneva) Technical Series."

Nectriella rousseliana on box, Somerset, Orange County, Virginia, Mrs. J. J. Woodriff, Nov. 19. Det. G. Hamilton Martin.

Phyllosticta caryae on pecan, Ovett, Jones County, Mississippi, L. E. Miles, Nov. 1. Det. G. Hamilton Martin.